

XXI. FURTHER NEUROPTEROID INSECTS FROM MALAYA.

By NATHAN BANKS.
(With seventeen figures).

Recent sendings of Neuropteroid insects from the Selangor Museum include several genera and species not hitherto known from Malaya. Such genera are *Micropsocus*, *Nepticulomima*, *Nogiperla*, *Kostka*, *Coniocompsa*, *Heoclisis* and *Paraethaloptera*.

Most of the eleven new species, however, are in genera well known from the Malay Peninsula. As usual, nearly all the specimens are due to the continued interest of Mr. H. M. Pendlebury in collecting these fragile insects.*

FAMILY PSOCIDÆ.

Sigmatoneura subcostalis Endl.

Selangor: Kuala Lumpur Gardens, 29 Dec.

Podopteroecus longicornis Bks.

Selangor: Kuala Lumpur Gardens, 29 Dec.

Stenopsocus tonkinensis Endl.

Pahang: Fraser's Hill, 4000 feet, 16 July.

Copostigma trimaculata Hag.

Pahang: Fraser's Hill, 4000 feet, 28 Sept.

Taeniostigma elongatum Hag.

Pahang: Cameron Highlands, 4800 feet, 25 June.

Psocus taprobanes Hag.

Pahang: Cameron Highlands, 4800 feet, 7 June;

Fraser's Hill, 4000 feet, 15 July.

Psocus bengalensis Kolbe.

Selangor: Kuala Lumpur, 6 June.

Psocus filicornis Endl.

Selangor, Kuala Lumpur Gardens, 2 March.

Psocus lemniscatus Enderl.

One specimen from Fraser's Hill, Pahang, 4200 ft., 21 July, is a slight variant of this species. The basal band is black, others bordered with black, no dark margin on upper branch of radial sector, nor along outer branch of medius;

* For previous reports on Malaysian Neuroptera, Trichoptera, etc., see: Vol. XVI, pp. 377-430 (1931).
Vol. XVII, pp. 567-578 (1934).

the cell M^3 is broader than in Enderlein's figure, not three times as long as broad. The lower branch of radial sector separates from upper one in a broad curve.

***Micropsocus basalis* Bks.**

One from Negri Sembilan, Port Dickson, 15 Jan. Described from Mindanao, Philippine Islands.

***Nepticulomima essigkeana* Enderl.**

From Cameron Highlands, Pahang, 4500 to 5000 ft., 14 June. Described from Ceylon.

FAMILY PERLIDÆ.

***Kalidasia kraepelini* Klap.**

Several from Kelantan and Selangor, Jan., Febr.

***Neoperla fallax* Klap.**

Pahang: Cameron Highlands, 4800 feet, 5 June.

***Neoperla jacobsoni* Klap.**

Pahang: Near Karak, Chintamani, Aug.; Selangor: Ulu Langat, Aug.: and other localities in Selangor, Aug.

***Neoperla luteola* Burm.**

Kelantan; Perak: Jor Camp, Batang Padang, 1800 feet, Febr., June.

***Javanita caligata* Burm.**

Perak: Batang Padang, 1800 feet, March.

Subgenus ***Phanoperla*** subgen. n.

There are several small species of *Neoperla* which differ both in venation and head from the normal *Neoperla*. In typical *Neoperla* the cubital fork arises at an acute angle quite a distance before the first cubito-medial cross-vein, and extends outward to near the anastomosis. In the species of *Phanoperla* this cubital fork arises in a broad curve at or beyond (rarely a little before) the first cubito-medial cross-vein, and runs into hind margin hardly more than one half way to anastomosis.

On the head the lateral boss of *Phanoperla* is small, and situate almost to the front end of the eye, very remote from the ocelli; never so far down in *Neoperla*.

The male genitalia have the two processes more subequal than in *Neoperla*. Type *Perla limosa* Hagen. *Neoperla minutissima* Enderlein is a similar species, and I describe a pale form, *P. pallipennis*, below. In the Philippines are four species; *Neoperla bakeri*, *N. consimilis*, *N. clarissa*, and *N. claggi*; in Borneo there is *N. hageni*. In *N. bakeri* the lateral boss is hardly as far forward as in the others, but still much nearer to end of eye than to ocellus.

The three species from the Indo-Malayan area are separated thus:

1. Ocelli as near to eyes as to each other; head, thorax and wings brownish.....*minutissima*.
Ocelli plainly nearer to each other than to the eyes 2.
2. Body and wings pale yellowish; antennæ and palpi dark*pallipennis*.
Head, thorax and wings brownish; antennæ and palpi pale*limosa*.

The types of *Perla limosa* Hagen all belong here, with genitalia very similar to *N. minutissima* Endl., also two males of his series of *Perla testacea*, but the other and larger male of *P. testacea* is very different.

Phanoperla pallipennis sp. n. (Fig. 17).

Pale yellowish throughout, but the palpi and antennæ (except basal joints) very plainly dark, last part of tarsi and the cerci toward tip dark; pronotum sometimes faintly embrowned.

Head moderately broad; ocelli small, little more than diameter apart, fully twice as far from the eyes. Back of the ocelli there is each side of the median groove a small elongate swelling or boss as in the other species; lateral boss small, rounded and situate far down near front end of eye (as in *minutissima*); pronotum nearly twice as broad in front as long, much narrowed behind, anterior corners rather sharp, front margin convex, sculpture not very coarse.

Forewing with about ten costals; two (or three) cross-veins beyond end of subcosta; radial sector forked but once; three to six median cross-veins; usually only two to cubital fork, and two beyond. In hindwing, radial sector forked once; no median cross-veins, and the cubital fork runs out as far as anastomosis. Setæ moderately long, and with long hairs; hair on venter shorter and more appressed.

In the male the two processes are fairly equal; inner edge of ninth segment roughened with many minute teeth.

Forewing 7 to 9 mm. long.

From Ta-Hian, Hainan Island, 17 to 24 June (Gressitt), and a female from Selangor, Malaya, 1—9, 1934 (Pendlebury). Type M.C.Z. no. 22696; paratype, Selangor Museum. In general appearance this is near to *N. clarissa* of the Philippines, but the lateral boss is lower down than in that species, the tarsi darker, and the genital processes different.

***Phanoperla minutissima* (Endl.).**

Specimens from Selangor: Kuala Lumpur, 22 Jan. In his description Enderlein noted the short cubital fork, and figured it as arising near the first cubito-median cross-vein.

***Nogiperla fraterna* sp. n. (Figs. 7, 14).**

Pale yellowish, pronotum and tip of abdomen more brownish, antennæ, cerci, and legs pale, the tarsi dark; wings pale, not fumose, veins pale. Head bent under pronotum, eyes hairy, ocelli plainly further apart than from the eyes, each on a black spot, no lateral boss, lateral face ridge running up inward of eye and curving toward the ocellus. Pronotum more than twice as broad as long, front border concave, somewhat narrowed behind, median area moderately broad, sculpture coarse. Venation very much as in *N. formosana* Oko., but in the forewing the medius is forked from anastomosis, thus in apical field are three simple veins between the fork of radial sector and that of the cubitus; in hindwing the medius is forked as in *N. formosana*, usually four median and cubital cross-veins. The ventral plate of the female bends down to form a great cavity, but the margin of the plate is truncate in the middle fourth. The basal joint of the cerci is shorter, stouter than in *N. formosana* and has at extreme tip the inwardly curved sharp spur, reddish, and on its upper side are several oblique ridges.

Forewing 9 mm. long.

Pahang: Cameron Highlands, 4800 to 5500 ft., 8 June, (Pendlebury).

***Nemoura atrissima* Samal.**

Pahang: Many from Fraser's Hill, 4000 feet 13 to 15 July, and Cameron Highlands, 4800—5500 feet, 16 June.

FAMILY MYRMELEONIDÆ.***Neglurus vitripennis* Navas**

Pahang: Near Karak, Chintamani Cave, 20 Aug.; Perlis: Bukit Jerneh, in cave, 17 March.

***Distoleon dirus* Wlk.**

Selangor: Kuala Lumpur Gardens, 8 June; The Gap, 2700 ft., 22 Sept.

***Pseudoformicaleo jacobsoni* Weele**

West Coast: Langkawi Isl., 18 May.

***Hagenomyia sagax* Wlk. (*sumatrensis* Weele)**

West Coast: Langkawi Isl., 1 May.

***Hagenomyia nicobaricus* Brauer**

East Coast: Tioman Isl., May.

Myrmeleon celebensis McLachl.

Pahang: Cameron Highlands, 4500 to 5000 ft., April (Abraham); Selangor: Kuala Lumpur Gardens, 15 Febr.; West Coast: Pulau Rumpia, 12 Nov. (Seimund).

Sogra negligens Navas

Negri Sembilan: Port Dickson, 27 April.

Heoclis lousiae sp. n.

Face below antennae pale yellow, brightest at mouth; palpi pale, last joint of maxillary palpi brown; vertex dull black, the transverse scars paler, some long white hair on head near and between basal joints of antennae; antennae dark, narrowly annulate with pale; pronotum dull black, a pale spot each side on anterior lobe, and another each side on front of posterior lobe, in middle traces of pale sericeous stripe; the long white hairs of sides are intermixed with black ones; rest of notum dull black, with a pale sericeous line in middle, and sericeous stripes each side, and three spots on the mesoscutellum, hair above on notum largely black, but in front mixed with white, and mostly white at sides behind and on the scutellum.

Pleura and sternum gray and with dense long white hair; legs black, with long white hair and on tibia a few black bristles.

Abdomen dark, with a sericeous bloom, clothed with many very short white hairs arising from black pits; venter also dark, and without pale marks.

Forewings gray hyaline; veins pale, marked with dots and streaks of black, various cross-veins wholly black; in three places these black cross-veins tend to form faint bands, one at first fourth ending in the cubital fork which is partly black, a faint one near middle, and a more distinct one a little beyond middle; stigma dark at base and whitish beyond.

Hindwings similar, but with less black on veins; in both wings the apical venation is so dense as to make the wings here darker.

Forewings with costals divided almost to base, apical area with two series of gradates; seven to nine cross-veins before origin of radial sector, seven to ten branches of radial sector; often one or two cells before cubital fork crossed.

In hindwings six cross-veins before radial sector, and ten branches to radial sector.

Shape of wings very similar to *H. kawaii*; forewings being more blunt-tipped than in *H. sinensis*.

Length forewing, 49 to 30 mm., width 11 to 12 mm.

Length hindwing, 45 mm., width 8.5 mm.

From Negri Sembilan; Port Dickson, 25 to 28 April, (Pendlebury).

FAMILY CHRYSOPIDÆ.

Synopsis of genera from the Malay Peninsula.

1. Divisory veinlet ending in a cross-vein.....2.
Divisory veinlet (when present) ending in the medius 5.
2. Pronotum broad, often nearly twice as broad as long,
in front wider than vertex*Nothochrysa*.
Pronotum nearly as long as broad, in front not as wide
as vertex3.
3. Wings very broad4.
Wings rather narrow; antennæ very long *Leucochrysa*.
4. About six cubitals beyond divisory, and about six
branches of radial sector ending in medius.....
Cladochrysa.
About ten cubitals beyond divisory, and about ten
branches of radial sector ending in medius..*Kostka*.
5. Costal area near base very broad, broader at radial
sector than length of second cubital cell.....6.
Costal area near base not so broad, at radial sector not
nearly as broad as length of second cubital cell....
Chrysopa.
6. No divisory veinlet*Sencera*.
A divisory veinlet present.....7.
7. At stigma the subcosta and radius almost touch, and
only one or two cross-veins between..*Ankylopteryx*.
At stigma subcosta and radius well separated, and with
about four cross-veins between.....*Indochrysa*.

Chrysopa species of Malaya, and Sumatra.

1. Three series of gradates more or less completely devel-
oped, seven cubital cross-veins beyond the divisory
veinlet*C. (Bornia) winkleri*.
But two series of gradates.....2.
2. With a dark spot or line between antennæ, wings
usually ornate (*Glenochrysa*) 3.
No dark spot at that place.....4.
3. Forewings with golden iridescent spots, also some dark
marks; dark spot at extreme base of forewing....
splendida.
Forewings not with golden spots, but many brown
ones, no dark spot at extreme base of forewing, but
one above and one just below the base.....*rizali*.

4. Three dark spots in a transverse row just below antennæ (middle one sometimes faint) basal costal space broader than usual in *Chrysopa*, normally but five cubitals beyond divisory veinlet, wings sometimes somewhat ornate.....(*Indochrysa*)—5.
Six or more cubitals beyond divisory veinlet, not three dark spots in row below antennæ, costal space at base narrower; wings rarely ornate.....6.
5. Only small faint clouds on wings, basal part of costa plainly black.....*nigrbasis*.
Distinct dark marks on forewings, which form a cross when the wings are folded; costal area at base not as broad as in *nigrbasis*.....*cruciata*.
6. Divisory cell large, broadly triangular, its lower base almost to medius; antennæ much longer than forewings, pleura with dark marks.....
(*Nodochrysa*) *necrota*.
Divisory cell more elongate; antennæ but little if any longer than forewings.....7.
7. Antennæ beyond basal joint black or plainly darkened for some distance, face or head often reddish, palpi pale.....8.
Antennæ not black, nor plainly darkened.....11.
8. Basal joint of antenna dark near tip on outer side, seven cubitals beyond divisory, pronotum not margined with reddish.....*flaveola*
Basal joint of antenna not dark.....9.
9. Seven cubitals beyond divisory, pronotum often red margined, and some gradates and other veins dark, face reddish.....*eurycista*.
Six cubitals beyond divisory, pronotum usually not with red.....10.
10. Veins almost wholly pale.....*ruficeps*.
Gradates and some costals black.....*rubida*.
11. Mesonotal lobes dark or with a definite dark spot..12.
Mesonotal lobes without dark mark.....14.
12. Mesonotal lobes with small black spot; seven cubitals beyond divisory, outer gradates forming an oblique line, dark.....*sumatrensis*.
Mesonotal lobes all dark.....13.
13. Inner gradates and some other veins dark; outer gradates not much separated.....*mesonotalis*.
Only outer gradates dark, and these widely separated from each other.....*perturbata*.

14. Outer gradates and marginal forks are plainly thickened *crassoneura*.
Not so 15.
15. Palpi marked with black 16.
Palpi wholly pale 18.
16. Basal joint of antenna nearly black, face with black marks, venation largely pale *atrioris*.
Basal joint of antenna at most with red outer streak, face more or less marked with red 17.
17. Second joint of antenna reddish, many cross-veins dark at one or both ends, and the gradates darkened *esakii*
Second joint of antenna not reddish, scarcely any veins, except gradates, darkened *neglecta*.
18. Usually two small spots on face, two strips on vertex, and a transverse line on pronotum behind middle...
jaluwana.
No such marks on head or pronotum 19.
19. Almost all cross-veins dark, dark dot at base of forewing *tropica*.
Many cross-veins pale 20.
20. First radial cross-vein and the seventh to the tenth plainly dark as well as the radial sector at this place; eight cubitals beyond the divisory, dark spot over fork of first anal *amabilis*.
Not so marked 21.
21. Dark spot over ends of first anal and another over some upper gradates of inner row, eight cubitals beyond divisory, hairs on veins very long *longipilis*.
Not so marked, six or seven cubitals beyond divisory 22.
22. Radial sector toward base and the medius in front of divisory cell swollen like the cubitus toward base, gradates dark *physophlebia*.
These veins not swollen 23.
23. Gradates pale, pronotum not margined, lower inner gradates only a little further apart than others, six cubitals beyond divisory *ochracea*.

Outer gradates partly dark, lower inner gradates much removed basally from others, pronotum faintly margined with reddish, seven cubitals beyond the divisory *javanica*.

***Chrysopa rubida* Navas**

Pahang: Fraser's Hill, 4200 ft., 16 July. This form agrees fairly well with the brief description of Navas from a Sumatran specimen. The head is orange or fulvous, unmarked, the basal joint of antennæ also orange and plainly inflated above, the rest of the antennæ is brown, but becomes darker toward the tip, the pronotum is green, with a median pale stripe. In the forewings some costals are black or darkened, the gradates dark, the outer ones most strongly so, origin of radial sector is also somewhat darkened; gradates subparallel, the outer row nearer to outer margin than to the inner row, six cubital cross-veins beyond end of the divisory cell, latter rather large, and extending quite a little basad of the cross-vein to cubitus. Hairs on veins short over most of the surface, but toward tip much longer. In the hind wings the outer gradates are dark.

***Chrysopa longipilis* sp. n. (Fig. 2).**

Body pale yellowish (probably greenish when alive), face whitish; palpi, antennæ, and legs pale, unmarked; wings hyaline, veins very pale. In forewings outer ends of about twelve costals dark, origin of the radial sector and cross-vein back to divisory cell, and inner gradates also dark. Two dark spots, one over two of the inner gradates above middle of row, and another over the branches of first anal shortly before their ends. Hindwing with a few costals dark, otherwise venation very pale. Hairs on veins very long, sometimes as long as width of a cell. In forewings costal area moderately broad, the costal cells narrow, some over three times as long as broad; radial sector rather strongly curved, six or seven cross-veins from radial sector to the medius; divisory vein ends beyond cross-vein and near end of the cell, eight cubital cross-veins beyond it; eight inner gradates, nine in outer row, inner row not parallel to outer, but latter nearly parallel to outer margin. In hindwings seven inner and outer gradates, more nearly parallel than in the forewings, and outer row nearly parallel to outer margin. Antennæ short, not as long as forewings; pronotum rather short, much narrowed in front.

Length of forewing 17 mm., width 7 mm.

Pahang: Cameron Highlands, 4500 to 4800 ft., 23 June, (Pendlebury).

***Chrysopa amabilis* sp. n. (Fig. 1).**

Body pale yellowish (probably greenish when alive); palpi pale, unmarked; legs pale; antennæ pale, but basal joint is more or less reddish on the outer side; wings hyaline; veins pale, some cross-veins dark. In the forewings about ten of the basal costals are dark, origin of radial sector

and the cross-vein back, first radial cross-vein, three or four radials toward stigma, the radial sector at this place more or less plainly, and also bases of several branches of the radial sector, inner gradates plainly, outer ones less distinctly, marginal forkings, and the divisory partly, all dark. A prominent dark, often black, V-mark over the first anals and the branch up to the third cubital cell; first, second, and third cubital cross-veins partly dark. In hindwings the radial sector is usually a little darkened beyond the middle of the wing.

Forewings moderately slender, costal area moderate, the cells at most twice as long as wide; radial sector only moderately curved; inner gradates of six or seven, outer of six, in the inner row the two lower ones are much more basad than the others, the two rows not parallel, but outer row parallel to outer margin, and about as near to it as to inner row; eight cubital cross-veins beyond the divisory vein, the latter ends well beyond the cross-vein. In hindwings five or six gradates in each row, more nearly parallel than in the forewings. Antennæ about as long as forewings, basal joint tapering toward tip; pronotum rather long, and much narrowed in front.

Length forewing 13 mm.; width 4.6 mm.

Pahang: Cameron Highlands, 14, 15, 28 June, 4500 to 5000 ft.; and Fraser's Hill, 28 Sept., 4200 ft. (Pendlebury).

The number of cubital cross-veins and the marks on forewings readily separate it.

***Chrysopa ochracea* Alb.**

Selangor: Kuala Lumpur, 11 Jan.

***Chrysopa rizali* Bks.**

Pahang: Cameron Highlands, 4500 to 5000 ft., 14 June.

***Chrysopa neglecta* Bks.**

Pahang: Cameron Highlands, 4800 ft., 20, 24 June.

***Chrysopa (Glenochrysa) splendida* Weele**

Negri Sembilan; Port Dickson, 19 Dec.

***Chrysopa (Indochrysa) nigribasis* Bks.**

Selangor: Ulu Langat, at light, 1 Sept.

***Leucochrysa abnormis* Alb.**

Pahang: Fraser's Hill, 4200 ft., 18 July.

***Ankylopteryx nervosa* Navas**

Selangor: Kanching Forest Resr., Sept.

***Ankylopteryx trimaculata* Gir.**

Selangor: Kuala Lumpur Gardens, 19 Jan.

Kostka nacaratus Navas (Fig. 8).

One specimen of this rare form from Pahang: Cameron Highlands, 4500 to 4800 ft., 23 June. It was described from Sumatra. The general appearance is that of a large *Ankylopteryx* or a small *Apochrysa*; the costal area, however, is not so broad at base. The two large dark spots on the forewing are not very prominent, besides the three spots mentioned by Navas there is, in this specimen, a small fourth one on the first radial cross-vein.

The venation is dense; there are thirty costal cross-veins before stigma, seventeen radials, and twenty-four branches of the radial sector of which ten run into the medius; ten or eleven cubital cross-veins beyond the division cell; two branches from third cubital cell to the margin, and one from the next cell and most of those beyond.

In the hindwings the basal extension of the radial sector is united to medius for some distance, and the triangle is long and slender. The hairs on veins of both wings are moderately long; on costal area of forewings they are about one half a cell width, elsewhere often a little shorter.

The pronotum is very similar to that of *Leucochrysa abnormis*, and in this specimen there is a red spot on each side. The basal antennal joints are only a little separated, scarcely swollen, and not twice as long as broad; the vertex triangle is distinctly elevated, flat above, and here transversely striated.

FAMILY MICROMIIDÆ (HEMEROBIIDÆ AUCT.)

Eumicromus pusillus Gerst.

Selangor: Kuala Lumpur, April; in Lake Gardens, 19 Jan., 27 Aug.

Eumicromus morosus Gerst.

Pahang: Fraser's Hill, 4200 ft., 22 July.

Annandalia hageni Bks.

Selangor: Kuala Lumpur, 3 June, at light.

This distinct little species was described from Ceylon; the costal area is more narrow than in the common Indian form, *A. curta* Needh.

FAMILY MANTISPIDÆ.

Mantispa annulicornis Gerst.

Selangor: Kuala Lumpur Gardens, Nov.

FAMILY CONIOPTERYGIDÆ.

Coniopteryx fletcheri Withycmb.

Selangor: Kuala Lumpur, 30 June.

Malacomyza ambigua Withymb.

Selangor: Kuala Lumpur, 12 May, 12 Oct.

Niphadicera terminalis Bks.

Selangor: Kuala Lumpur, 22 April, 1 Jan.

Coniocompsa vesiculigera Enderl.

Selangor: Kuala Lumpur, 24 March, 4 April; in Lake Gardens, 8 Dec.

TRICHOPTERA.

FAMILY SERICOSTOMATIDÆ.

Goera parvula sp. n. (Figs. 15, 16.)

Palpi with black hair on base, at tip white; basal part of antennæ with some black hairs below, inner sides and above with white hair, vertex and pronotum also with long white hair, rest of antennæ reddish-brown, annulate with whitish; front legs nearly black, others yellowish-brown, the tarsi darker, spurs dark. Forewings clothed with brown and white hair, giving a generally gray appearance, apical fringe long, dark, very dark at tip and at anal angle.

In forewings discal cell only moderately long, its base only a trifle in front of base of the sixth apical cell, fork one back on discal cell twice the width of discal, fork two back nearly width of discal on discal cell, fork three with pedicel fully one half of discal cell; at upper base of enlarged area medius and cubitus unite at one point.

Genitalia somewhat like *G. tenuis*, but lateral pieces shorter and more slender, and these and the long superior pieces scarcely at all hairy; the ventral spine is slender and tapering to tip, and there are no small spines each side of it.

Length of forewing 5 mm.

From Pahang: Cameron Highlands, 4800 ft., 7 and 24 June, (Pendlebury).

Goerodes abrupta Bks.

Pahang: Cameron Highlands, 4500 to 4800 ft., 16 to 23 June.

Goerinella venularis Bks.

Pahang: Cameron Highlands, 4300 to 4800 ft., 7 to 16 June.

Probably the male of *Goerodes abrupta*.

FAMILY HYDROPSYCHIDÆ.

Amphipsyche nirvana Bks.

Selangor: Kuala Lumpur, 17 Dec., in Lake Gardens, 7 April.

Paraethaloptera punctata sp. n. (Fig. 5).

♀. Head and thorax pale whitish, unmarked, abdomen dark, apical margin of segments paler, and extreme tip pale, antennæ pale, basal joint somewhat darker on outside, third joint almost wholly dark, beyond each joint is about half dark and half white, the white lessening towards tip until it disappears; legs wholly pale, unmarked; wings hyaline whitish, with greenish veins, with about six black dots, somewhat differently arranged than in *Aeth. sex-punctata*, the first spot not nearly so close to base of wing, and between cubitus and first anal, the next spot between median branch and cubitus, then one (smaller) at each end of the cross-vein connecting median branches (at base of median cell) and on the radial sector one above them, and the sixth at the tiny cell at base of fork two. The costal cross-veins are fainter than in *Aeth. sex-punctata* but in the right light a few can be seen, the number variable; the end of the subcosta is present; upper side of median cell plainly bowed forward, the radial sector is further from the radius than in *P. gracilis*.

In hindwing the venation very similar to that of *P. gracilis*, but the two apical veins behind the first apical fork are close together at base, or even with a tiny cell.

The midlegs of female are much as figured for *P. gracilis*, but on one specimen there is a distinct, though small, sub-basal spur on the tibia.

Forewings 9.5 mm. long.

Negri Sembilan: Port Dickson, Jan. 10; and Selangor: Kuala Lumpur 4 to 16 April, Febr. 8, (Pendlebury).

Polymorphanisus nigricornis Walk.

Selangor: Ulu Langat, 31 Aug.

Macronema eleanora sp. n. (Figs. 3, 13).

Head pale yellowish, sides of face black, and on vertex a black triangle inward from each eye, but not meeting; palpi pale, the fourth joint dark brown; antennæ pale yellow on basal joints, beyond (especially above) for about six joints black; then quite pale, but becoming darker again toward tip; pronotum pale yellow; rest of thoracic notum black, except a yellow spot before base of forewings; abdomen yellowish, tip dark; legs pale yellowish, front tibiæ (both sexes) black; mid and hind-tibiæ slightly darkened toward tip, latter with dark ring at tip; spurs pale, but the outer one is darkened on the outer side.

Forewings mostly black, and with black hair, several large and some smaller hyaline spots clothed with white hair. Three large ones along costa, one, oblique, at basal

third; two close together toward the stigmal region, the outer one of the two is rather quadrangular, behind its inner base is a rectangular spot reaching to the hind margin, and beyond are two spots, one rather long and curved, the other more triangular; behind the most basal costal spot is an elongate hyaline streak, divided by black bars into four or five spots, the basal one is elongate. In one specimen these pale spots are larger, and some connect. Hindwing brown, its tip black, the costal area to near tip is hyaline. The venation is much as usual; the discal cell fully twice as long as broad; fork one with a rather long pedicel; median cell fully three times as long as broad, its base truncate, the cross-vein, starting from its lower basal corner, extends obliquely back to the cubitus.

On the venter the eversible (?) sacs are distinct, in the male very broad, hyaline, in the female much more slender.

The male claspers are slender, the apical part more slender, paler, and longer than the basal part; the superior plate is produced into a white, pointed projection.

Forewing 13 mm. long.

Pahang: Fraser's Hill, 4200 ft., 14 and 21 July. (Pendlebury).

Macronema similior Bks.

Negri Sembilan: Port Dickson, 14 Jan.

Stenopsyche ochreipennis Alb.

Kelantan: Sg. Brok, 2000 ft., 24 Febr., at light.

Polyplectropus analis Bks.

Pahang: Cameron Highlands, 4500 to 5000 ft., 19 June.

Nyctiophylax abrupta Bks.

Negri Sembilan: Port Dickson, 14 Jan.

Hydropsyche injusta sp. n. (Figs. 4, 6).

Head and thorax brownish-yellow, clothed with mostly pale yellowish hair, erect brown hair on each side of vertex; antennæ pale, annulate as usual; abdomen brown; legs pale yellowish, front femora and tibiæ in male darkened, spurs pale. Forewing clothed with much pale hair on basal part, toward tip the wing is darker and at tip dark brown, outer fringe mostly black; hindwings gray, with gray to dark brown fringe, veins brown. In forewing the discal cell is about two and one half times as long as broad, the forks as usual, but fork four is plainly wider near base than fork five. In the male genitalia the superior plate has two long slender nearly parallel appendages, curved down and the tips

a trifle enlarged, above is a rounded hump; the claspers are moderately long, not sinuate, the apical joint moderately slender, and nearly of equal width throughout. The penis is large and broad, constricted just before the greatly enlarged tip, and here with a sharp, recurved spine each side, and more basad is a stout sharp hump each side.

Length of forewing 10 to 11 mm.

Pahang: Cameron Highlands, 4500 to 5000 ft., 7, 18, 23, 24 June, (Pendlebury).

Hydropsyche pallipenne sp. n. (Figs. 9, 11).

Head and thorax pale, clothed with pale yellow hair; antennæ pale, a dark band over joinings; abdomen brownish; legs pale yellowish, front femora and tibiæ of male darkened, also the tarsi dark, spurs pale. Forewing clothed with much very pale yellowish hair, broken and irrorated with pale brown, mostly toward tip of wing in front and behind, outer fringe black, interrupted by pale spaces, veins toward tip pale brown; hindwings gray, veins yellowish, fringe gray. In forewings the discal cell is over three times as long as broad, fork two back on discal not its width, fork one twice as long as its pedicel, fork three not reaching to base of two, forks four and five about equal.

Male genitalia have two short, clavate, processes on the superior plate, the clasper is long, and curved, the apical joint moderately slender and wider at tip than elsewhere; the penis is rather short and stout, seen from above its tip is forked in two curved points, and between is a slender, slightly clavate process, from the side the latter shows as a long, tapering process.

Length of forewing, 9 to 9.5 mm.

Pahang: Cameron Highlands, 4800 ft., 18 to 24 June, (Pendlebury).

FAMILY RHYACOPHILIDÆ.

Rhyacophila perdita sp. n. (Figs. 10, 12).

Head clothed with mostly golden hair, a few black ones, some black each side on vertex, palpi distinctly greenish, basal joints of antennæ pale, beyond for nearly half way plainly greenish, beyond that nearly black. Thorax with mostly golden hair, some black near base of wings; abdomen dull black above, greenish below; legs pale, with a tinge of greenish in some places, particularly on tibiæ and tarsi, spurs black. Forewings brown, irrorated with golden or yellowish, about ten transverse spots in costal area, largely golden near apex and on the posterior apical cells; erect black hair along anal vein, apical fringe black, with a patch of golden between ends of veins; anal area largely without hair; hind wings gray, veins brown, except subcosta, which

is plainly greenish; fringe dark slightly broken with pale. In forewings forks one and two of equal length, fork three about one half as long, fork four about as far back as fork two, fork five as far back as forking of radial sector.

Penultimate ventral segment with a moderately short, tapering median process, and on preceding segment a small point. Male genitalia have the claspers large and long, the apical part short, but elongated on lower edge; seen obliquely this part appears more strongly emarginate, the superior pieces are elongate, close together and bent down.

Length of forewings 8.5 mm.

Pahang: Cameron Highlands, 4500 to 5000 ft., 17 June, (Pendlebury).

***Rhyacophila cameroni* Bks.**

Pahang: Cameron Highlands, 4500 to 5000 ft., 17 June.

***Glossosoma malayanum* Bks.**

Pahang: Fraser's Hill, 4200 ft., 29 Sept.

***Apsilochorema malayanum* Bks.**

Pahang: Cameron Highlands, 4800 ft., 7 June.

FAMILY LEPTOCERIDÆ.

***Oecetina confluens* Ulmer**

Selangor: Kuala Lumpur Gardens, 15 July.

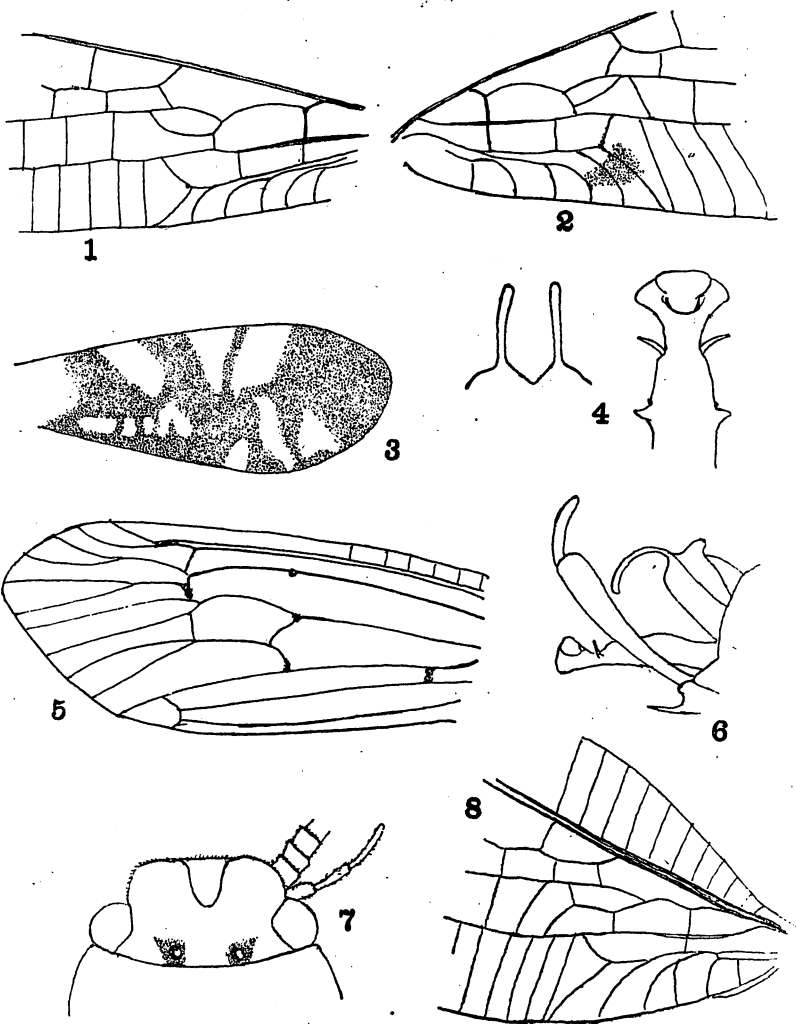
FAMILY CALAMOCERATIDÆ.

***Asotocerus fuscipennis* Alb.**

Selangor: Kuala Lumpur, 26 March, at light.

Explanation of Figures.

- Fig. 1 *Chrysopa amabilis*, region of divisory cell.
2 *Chrysopa longipilis*, region of divisory cell.
3 *Macronema eleanora*, forewing.
4 *Hydropsyche injusta*, superior plate and penis above.
5 *Paraethaloptera punctata*, forewing.
6 *Hydropsyche injusta*, genitalia, side view.
7 *Nogiperla fraterna*, head above.
8 *Kostka nacaratus*, base of forewing.
9 *Hydropsyche pallipenne*, superior plate above.
10 *Rhyacophila perdita*, genitalia, side view.
11 *Hydropsyche pallipenne*, genitalia, side view.
12 *Rhyacophila perdita*, genitalia below.
13 *Macronema eleanora*, genitalia below, and gland.
14 *Nogiperla fraterna*, cerci of male.
15 *Goera parvula*, part of forewing.
16 *Goera parvula*, genitalia, side, and ventral spine.
17 *Phanoperla pallipennis*, male appendages.



BANKS: *Malayan Neuropteroid Insects.*

